

10/510363

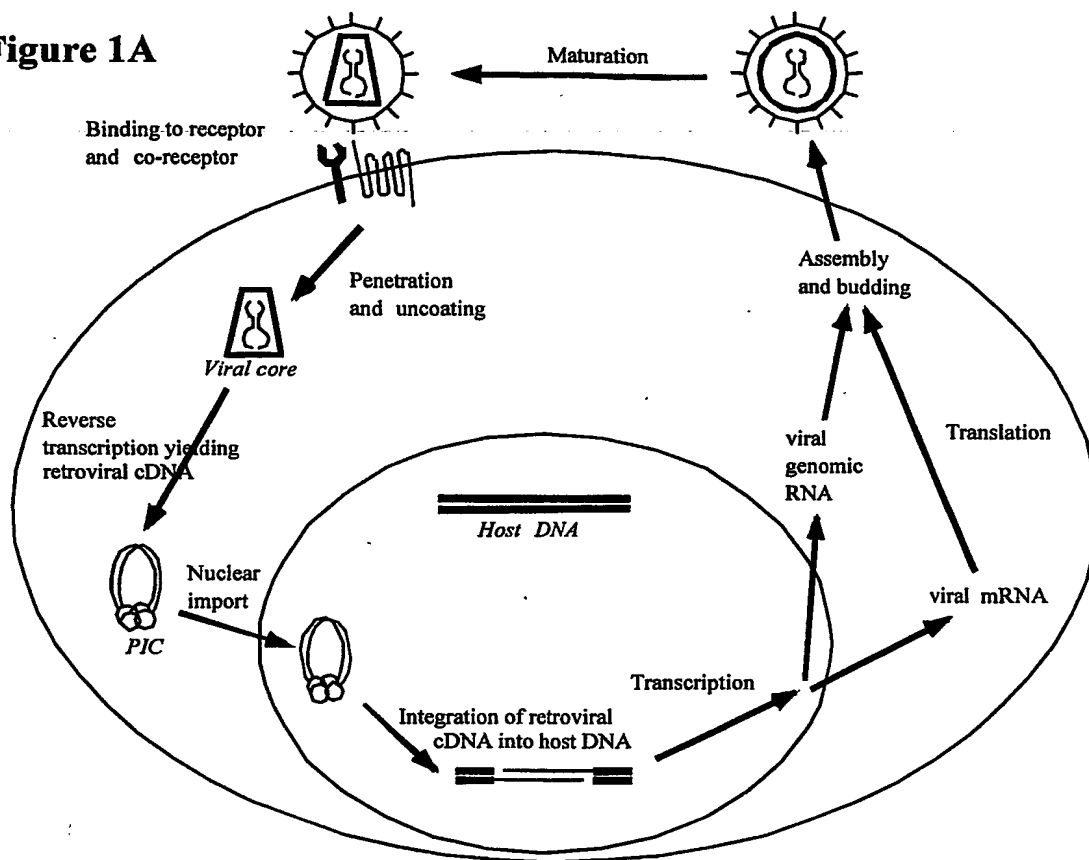
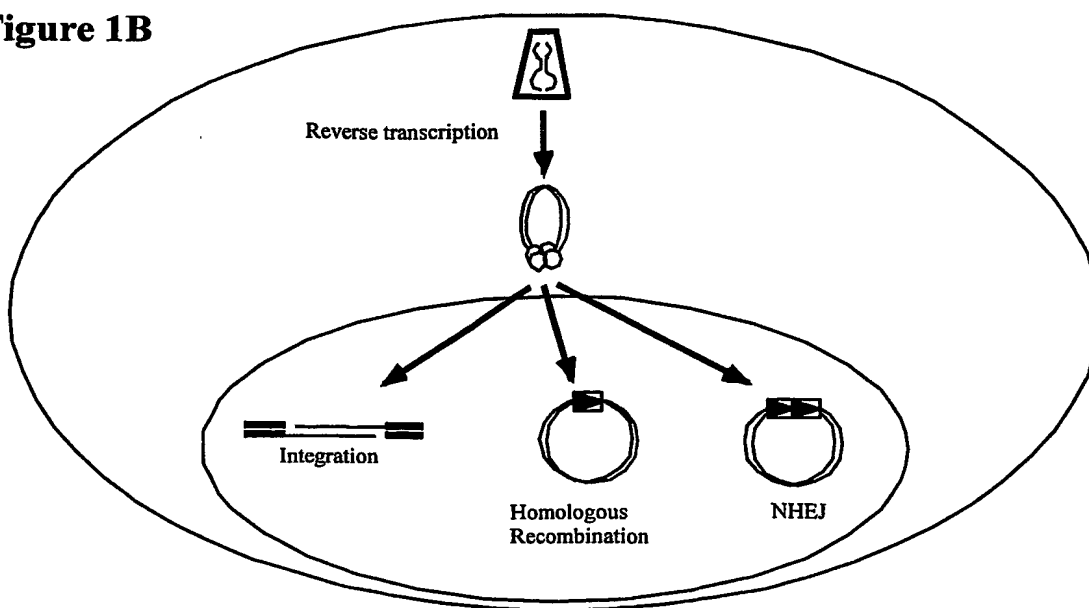
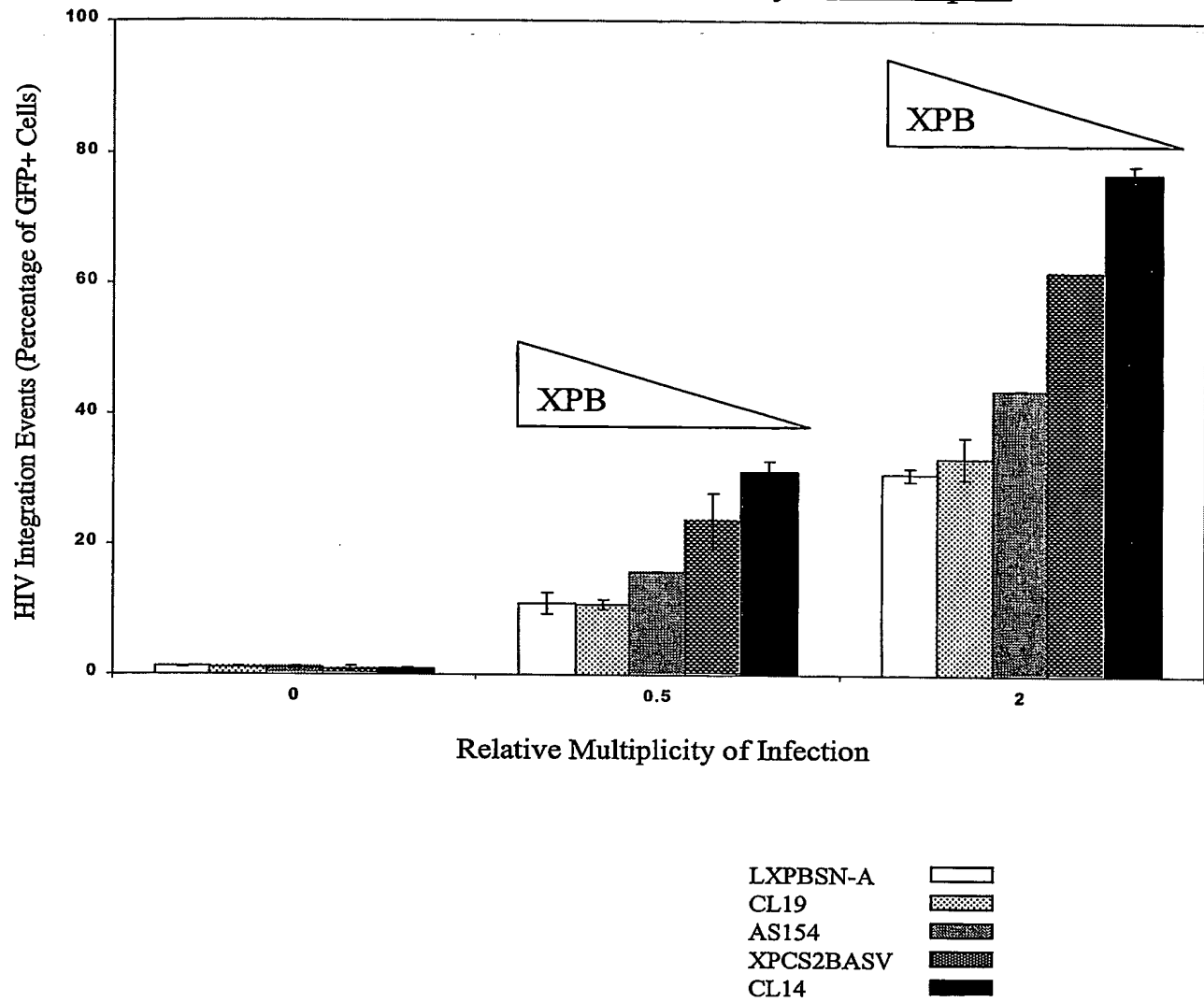
Figure 1A**Figure 1B**

Figure 2
HIV Integration Is Controlled By DNA Repair



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Figure 3A
Retroviral Provirus

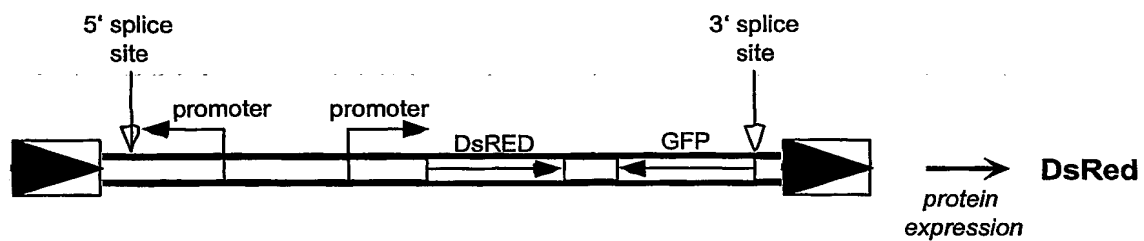
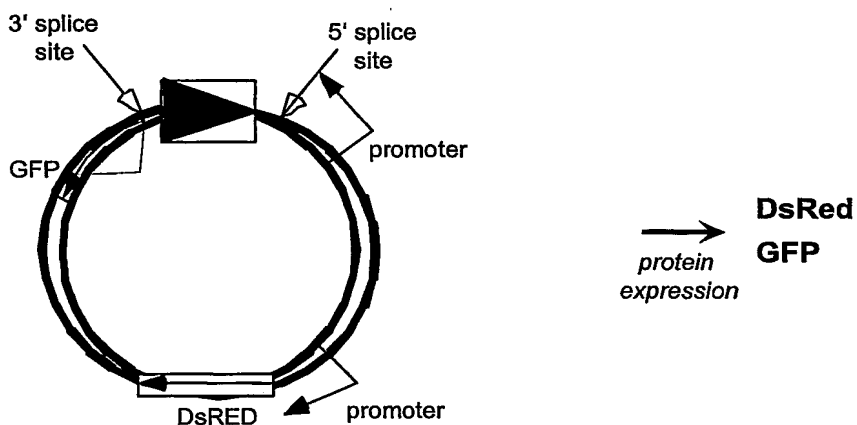


Figure 3B
Retroviral 1-LTR Circle



Retroviral 2-LTR Circle

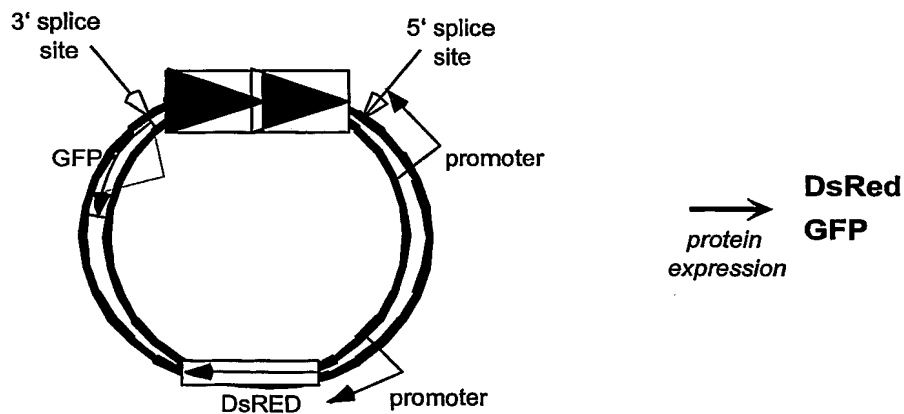


Figure 4A

1 GGGAGCTTCCGGATTGAGCCGGAAGTCCCCCAGAGCGGATGCCGCGGCGGGCCTGTGGG
61 AGCGGGGTCATCTTCTCTCTGCTGCTGTAGCTGCCATGGGCAAAGAGACCGAGCGGACC
121 GCGACAAGAAGAAATCCAGGAAGCGGCACCTATGAGGATGAAGAGGATGATGAAGAGGACG
181 CCCCCGGGAACGACCCTCAGGAAGCGGTTCCCTCGGCGGCGGGGAAGCAGGTGGATGAGT
241 CAGGCACCAAAGTGGATGAATATGGAGCCAAGGACTACAGGCTGCAAATGCCGCTGAAGG
301 ACGACCACACCTCCAGGCCCTCTGGGTGGCTCCCGATGGCCATATCTTCTTGGAAGCCT
361 TCTCTCCAGTTTACAAATATGCCCAAGACTTCTTGGTGGCTATTGCAGAGCCAGTGTGCC
421 GACCAACCCATGTGCATGAGTACAACTAACTGCCTACTCCTTGTATGCAGCTGTGAGCG
481 TTGGGCTGCAAACCAGTGACATCACCGAGTACCTCAGGAAGCTCAGCAAGACTGGAGTCC
541 CTGATGGAATTATGCAGTTTATTAAGTTGTGTACTGTGAGCTATGGAAAAGTCAAGCTGG
601 TCTTGAAGCACAACAGATACTTCGTTGAAAGTTGCCACCCTGATGTAATCCAGCATCTTC
661 TCCAGGACCCCGTGATCCGAGAATGCCGCTTAAGAACTCTGAAGGGGAGGCCACTGAGC
721 TCATCACAGAGACTTTCACAAGCAAATCTGCCATTTCTAAGACTGCTGAAAGCAGTGGTG
781 GGCCCTCCACTTCCCGAGTGACAGATCCACAGGGTAAATCTGACATCCCCATGGACCTGT
841 TTGACTTCTATGAGCAAATGGACAAGGATGAAGAAGAAGAAGAAGAGACACAGACAGTGT
901 CTTTTGAAGTCAAGCAGGAAATGATTGAGGAACCTCAGAAACGTTGCATCCACCTGGAGT
961 ACCCTCTGTTGGCAGAATATGACTTCCGGAATGATTCTGTCAACCCTGATATCAACATTG
1021 ACCTAAAGCCCACAGCTGTCTCAGACCCTATCAGGAGAAGAGCTTGCGAAAGATGTTTG
1081 GAAACGGGCGTGACGTTCCGGGGTCATTGTTCTTCCCTGCGGTGCTGGAAAGTCCCTGG
1141 TTGGTGTGACTGCTGCATGCACTGTGAGAAACGCTGTCTGGTGCTGGGCAACTCAGCTG
1201 TTTCTGTGGAGCAGTGGAAAGCCCAGTTCAAGATGTGGTCCACCATTGACGACAGCCAGA
1261 TCTGCCGGTTCACCTCCGATGCCAAGGACAAGCCCATCGGCTGCTCCGTTGCCATTAGCA
1321 CCTACTCCATGCTGGGCCACACCACCAAAGGTCTGGGAGGCCGAGCGAGTCATGGAGT
1381 GGCTCAAGACCCAGGAGTGGGGCCTCATGATCCTGGATGAAGTGCACACCATAACAGCCA
1441 AGATGTTCCGAAGGGTGCTCACCATCGTGACGGCCCACTGTAAGCTGGGTTTGACTGCGA
1501 CCCTCGTCCGCGAAGATGACAAAATTTGTGGATTTAAATTTTCTGATTGGGCCTAAGCTCT
1561 ACGAAGCCAACTGGATGGAGCTGCAGAATAATGGCTACATCGCCAAAGTCCAGTGTGCTG
1621 AGGTCTGGTGCCCTATGTCTCCTGAATTTTACCGGGAATATGTGGCAATCAAAACCAAGA
1681 AACGAATCTTGCTGTACACCATGAACCCCAACAAATTTAGAGCTTGCCAGTTTCTGATCA
1741 AGTTTCATGAAAGGAGGAATGACAAGATTATTGTCTTTGCTGACAATGTGTTTGCCCTAA
1801 AGGAATATGCCATTCGACTGAACAAACCCTATATCTACGGACCTACGTCTCAGGGGGAAA
1861 GGATGCAAATTTCTCCAGAATTTCAAGCACAACCCCAAAATTAACACCATCTTCATATCCA
1921 AGGTAGGTGACACTTCGTTTGATCTGCCGGAAGCAAATGTCCTCATTCAGATCTCATCCC
1981 ATGGTGGCTCCAGGCGTCAGGAAGCCCAAAGGCTAGGGCGGGTGCTTCGAGCTAAAAAAG
2041 GGATGGTTGCAGAAGAGTACAATGCCTTTTTCTACTCACTGGTATCCCAGGACACACAGG
2101 AAATGGCTTACTCAACCAAGCGGCAGAGATTCTTGGTAGATCAAGGTTATAGCTTCAAGG
2161 TGATCACGAACTCGCTGGCATGGAGGAGGAAGACTTGGCGTTTTCGACAAAAGAAGAGC
2221 AACAGCAGCTCTTACAGAAAGTCCTGGCAGCCACTGACCTGGATGCCGAGGAGGAGGTGG
2281 TGGCTGGGGAATTTGGCTCCAGATCCAGCCAGGCATCTCGGCGCTTTGGCACCATGAGTT
2341 CTATGTCTGGGGCCGACGACACTGTGTACATGGAGTACCACTCATCGCGGAGCAAGGCGC
2401 CCAGCAAACATGTACACCCGCTCTTCAAGCGCTTTAGGAAATGATGCTTAGGCAGGGTAC
2461 TTCGTTCAAGACCGGCGCTTGGCACCCCTTGTTGGAAAGGGATTTTCAGCATAACATTTTC
2521 CTTCCACCTCTTTGACCTTCCCTCCAGCGTTGGCCAAATTTGTGCTGAGGAAGATGCATCA
2581 AGGGCTTGGCTGTGCCTTCATAGGTATCTAGGGTTTTATAAAGGAGGAGGAGACAATAT
2641 TTTTTCAAACTTTTTGGGGAGTGGGGTCATTTCTGTATATAAAAAATGTTAATATTTAAG
2701 GTGTATTTATGTTACCGTTCTGAATAAACAGAATGGACCATTGAACCGTA

Figure 4B

MGKRDRADRDKKKSRKRHYEDEEDDEEDAPGNDPQEAVPSAAGKQVDESGTKVDEYGAKDYRLQ
MPLKDDHTSRPLWVAPDGHIFLEAFSPVYKYAQDFLVAIAEPVCRPTHVHEYKLTAYSLYAAS
VGLQTS DITEYLRKLSKTGVPDGIMQFIKLCTVSYGKVKLV LKHNR YFVESCHPDV IQHLLQDP
VIRECRLRNSEGEATELITETFTSKSAISKTAESSGGPSTSRVTDPOGKSDIPMDLFD FYEQMD
KDEEEEEETQTVSFEVKQEMIEELQKRCIHLEYPLLA EYDFRND SVNPDINIDLKPTAVLRPYQ
EKSLRKMFGNGRARS GVI VLP CGAGKSLVGVTAACTVRKRCLVLGNSAVSVEQWKAQFKMWSTI
DDSQICRFTSDAKDKPIGCSVAISTYSMLGHTTKRSWEAERVM EWLKTQEWGLMILDEVHTIPA
KMFRRVLTIVQAHCKLGLTATLVREDDKIVDLN FLIGPKLYE ANWMELQNNGYIAKVQCAEVWC
PMSPEFYREYVAIKTKKRILLYTMNPNKFRACQFLIKFHERRNDKIIVFADNVFALKEYAIRLN
KPYIYGPTSQGERMQILQNFKHNP KINTIFISKVGDTSFDLPEANVLIQISSHGGSR RQEAQRL
GRVLR AKKGMVAEEYN AFFYSLVSQDTQEMAYSTKRQRFLVDQGY SFKVITKLAGEEEDLAFS
TKEEQQQLLQKVLAATDLDAEEEVVAGEFGSRSSQASRRFGTMSMSGADDTVYMEYHSSRSKA
PSKHVHPLFKRFRK

Figure 4C

1 ATGAAGCTCAACGTGGACGGGCTCCTGGTCTACTTCCCGTACGACTACATCTACCCCGAG
61 CAGTTCTCCTACATGCGGGAGCTCAAACGCACGCTGGACGCCAAGGGTCATGGAGTCCTG
121 GAGATGCCCTCAGGCACCGGGAAGACAGTATCCCTGTTGGCCCTGATCATGGCATAACAG
181 AGAGCATATCEGCTGGAGGTGAECAAACTCATCTACTGCTCAAGAACTGTGCCAGAGATT
241 GAGAAGGTGATTGAAGAGCTTCGAAAGTTGCTCAACTTCTATGAGAAGCAGGAGGGCGAG
301 AAGCTGCCGTTTCTGGGACTGGCTCTGAGCTCCCGCAAAAACCTTGTGTATTACCCCTGAG
361 GTGACACCCCTGCGCTTTGGGAAGGACGTGCGATGGGAAATGCCACAGCCTCACAGCCTCC
421 TATGTGCGGGCGCAGTACCAGCATGACACCAGCCTGCCCCACTGCCGATTCTATGAGGAA
481 TTTGATGCCCATGGGCGTGAGGTGCCCTCCCCGCTGGCATCTACAACCTGGATGACCTG
541 AAGGCCCTGGGGCGGCGCCAGGGCTGGTGCCCATACTTCTTGCTCGATACTCAATCCTG
601 CATGCCAATGTGGTGGTTTATAGCTACCACTACCTCCTGGACCCCAAGATTGCAGACCTG
661 GTGTCCAAGGAACTGGCCCGCAAGGCCGTGCTGGTCTTCGACGAGGCCCAACATTGAC
721 AACGTCTGCATCGACTCCATGAGCGTCAACCTCACCCGCCGACCCTTGACCGGTGCCAG
781 GGCAACCTGGAGACCCTGCAGAAGACGGTGCTCAGGATCAAAGAGACAGACGAGCAGCGC
841 CTGCGGGACGAGTACCGGCGTCTGGTGGAGGGGCTGCGGGAGGCCAGCGCCGCCCGGGAG
901 ACGGACGCCACCTGGCCAACCCCGTGCTGCCCGACGAAGTGCTGCAGGAGGCAGTGCCT
961 GGCTCCATCCGCACGGCCGAGCATTTCTGGGCTTCCTGAGGCGGCTGCTGGAGTACGTG
1021 AAGTGGCGGCTGCGTGTGCAGCATGTGGTGCAGGAGAGCCCGCCCGCCTTCCTGAGCGGC
1081 CTGGCCCAGCGCGTGTGCATCCAGCGCAAGCCCCTCAGATTCTGTGCTGAACGCCTCCGG
1141 TCCCTGCTGCATACTCTGGAGATCACCGACCTTGCTGACTTCTCCCCGCTCACCTCCTT
1201 GCTAACTTTGCCACCCTTGTCAGCACCTACGCCAAAGGCTTCACCATCATCATCGAGCCC
1261 TTTGACGACAGAACCCCGACCATTGCCAACCCCATCCTGCACTTCAGCTGCATGGACGCC
1321 TCGCTGGCCATCAAACCCGTATTTGAGCGTTTCCAGTCTGTATCATCACATCTGGGACA
1381 CTGTCCCCGCTGGACATCTACCCCAAGATCCTGGACTTCCACCCCGTCACCATGGCAACC
1441 TTCACCATGACGCTGGCACGGGTCTGCCTCTGCCCTATGATCATCGGCCGTGGCAATGAC
1501 CAGGTGGCCATCAGCTCCAAATTTGAGACCCGGGAGGATATTGCTGTGATCCGGAACAT
1561 GGGAACCTCCTGCTGGAGATGTCCGCTGTGGTCCCTGATGGCATCGTGGCCTTCTTCACC
1621 AGCTACCAGTACATGGAGAGCACCGTGGCCTCCTGGTATGAGCAGGGGATCCTTGAGAAC
1681 ATCCAGAGGAACAAGCTGCTCTTTATTGAGACCCAGGATGGTGCCGAAACCAGTGTGCGC
1741 CTGGAGAAGTACCAGGAGGCCTGCGAGAATGGCCGCGGGGCCATCCTGCTGTCAGTGGCC
1801 CGGGGCAAAGTGTCCGAGGGAATCGACTTTGTGCACCACTACGGGCGGGGCCGTATCATG
1861 TTTGGCGTCCCCTACGTCTACACACAGAGCCGCATTCTCAAGGCGCGGCTGGAATACCTG
1921 CGGGACCAGTTCAGATTCTGTGAGAATGACTTTCTTACCTTCGATGCCATGCGCCACGCG
1981 GCCCAGTGTGTGGGTGCGGCCATCAGGGGCAAGACGGACTACGGCCTCATGGTCTTTGCC
2041 GACAAGCGGTTTGCCCGTGGGGACAAGCGGGGGAAGCTGCCCCGCTGGATCCAGGAGCAC
2101 CTCACAGATGCCAACCTCAACCTGACCGTGGACGAGGGTGTCCAGGTGGCCAAGTACTTC
2161 CTGCGGCAGATGGCACAGCCCTTCCACCGGGAGGATCAGCTGGGCCTGTCCCTGCTCAGC
2221 CTGGAGCAGCTAGAATCAGAGGAGACGCTGAAGAGGATAGAGCAGATTGCTCAGCAGCTC
2281 TGAGTGGGGCGGGTGGGGCCATAAACGGTTCTGGTGA

Figure 4D

MKLNVDGLLVYFPYDYIYPEQFSYMRELKRTLDAKGHGVLEMPSGTGKTVSLLALIMAYQRAYPLE
VTCLIYCSRTVPEIEKVIEELRKLLNFYEKQEGEKLPFLGLALSSRKNLCTHPEVTPLRFGKDVDG
KCHSLTASYVRAQYQHDTSLPHCRFYEEFDAHGREVPLPAGIYNLDDLKALGRRQGWCPYFLARYS
ILHANVVVYSYHYLLDPKIADLVSKELARKAVVVFDEAHNIDNVCIDSMVNLTRRTLDRCOGNLE
TLQKTVLRIKETDEQRLRDEYRRLVEGLREASAARETDAHLANPVLPEVLQEAVPGSIRTAEHFL
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PLDIYPKILDFHPVTMATFTMTLARVCLCPMIIGRGNDQVAISSKFETREDIAVIRNYGNLLLEMS
AVVPDGIVAFFTSYQYMESTVASWYEQGILENIQRNKLLFIETQDGAETSVALEKYQEACENGRGA
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AQCVGRAIRGKTDYGLMVFADKRFARGDKRGKLPRWIQEHLTDANLNLTVDQVQVAKYFLRQMAQ
PFHREDQLGLSLLSLEQLESEETLKRIEQIAQQL

Figure 5A

CAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATAC
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GTTTTCGCCCEGAAGAACGTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCG
CGGTATTATCCCGTATTGACGCCGGGCAAGAGCAACTCGGTGCGCCGCATACACTATTCTC
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TAAGAGAATTATGCAGTGCTGCCATAACCATGAGTGATAACACTGCGGCCAACTTACTTC
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TAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGATCGCTG
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ATCAGAAGGCTGTAGACAAATACTGGGACAGCTACAACCATCCCTTCAGACAGGATCAGA

Figure 5B

AGAACTTAGATCATTATATAATACAGTAGCAACCCTCTATTGTGTGCATCAAAGGATAGA
GATAAAAGACACCAAGGAAGCTTTAGACAAGATAGAGGAAGAGCAAAACAAAAGTAAGAC
CACCGCACAGCAAGCGGCCGCTGATCTTCAGACCTGGAGCGCTCGAGGCGACTTACCTCT
CTAGAGTCGGTGTCTTCTATGGAGGTCAAACAGCGTGGATGGCGTCTCCAGGCGATCTG
ACGGTTCACTAAACGAGCTCTGCTTATATAGACCTCCCACCGTACACGCCTACCGCCCAT
TTGCGTCAATGGGGCGGAGTTGTTAEGACATTTTGGAAAGTCCCGTTGATTTTGGTGCCA
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CTATCCACGCCCATTGATGTACTGCCAAAACCGCATCACCATGGTAATAGCGATGACTAA
TACGTAGATGTACTGCCAAGTAGGAAAGTCCCATAAGGTCATGTACTGGGCATAATGCCA
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ATGTACTGCCAAGTGGGCAGTTTACCGTAAATACTCCACCCATTGACGTCAATGGAAAGT
CCCTATTGGCGTTACTATGGGAACATACGTCATTATTGACGTCAATGGGCGGGGGTCTGTT
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CGGTACCGCGGGGCCGGGATCCACCGGTGCGCACCATGGCCTCCTCCGAGAACGTCATCA
CCGAGTTCATGCGCTTCAAGGTGCGCATGGAGGGCACCGTGAACGGCCACGAGTTCGAGA
TCGAGGGCGAGGGCGAGGGCCGCCCTACGAGGGCCACAACACCGTGAAGCTGAAGGTGA
CCAAGGGCGGGCCCCCTGCCCTTCGCCTGGGACATCCTGTCCCCCAGTTCCAGTACGGCT
CCAAGGTGTACGTGAAGCACCCCGCCGACATCCCCGACTACAAGAAGCTGTCTTCCCCG
AGGGCTTCAAGTGGGAGCGCGTGATGAACCTTCGAGGACGGCGGGCGTGGCGACCGTGACCC
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TCCCCTCCGACGGCCCCGTGATGCAGAAGAAGACCATGGGCTGGGAGGCCTCCACCGAGC
GCCTGTACCCCCGCGAGGGCGTGCTGAAGGGCGAGACCCACAAGGCCCTGAAGCTGAAGG

Figure 5C

ACGGCGGCCACTACCTGGTGGAGTTCAAGTCCATCTACATGGCCAAGAAGCCCGTGCAGC
TGCCCGGCTACTACTACGTGGACGCCAAGCTGGACATCACCTCCCACAACGAGGACTACA
CCATCGTGGAGCAGTACGAGCGCACCGAGGGCCGCCACCACCTGTTCTGTAGCGGGGCC
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CCCGTATGGCTTTCATTTTCTCCTCCTTGATAAAATCCTGGTTGCTGTCTCTTTATGAGG
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GGCTGTTGGGCACTGACAATTCCGTGGTGTGTCGGGGAAGCTGACGTCCTTTCCATGGC
TGCTCGCCTGTGTTGCCACCTGGATTCTGCGCGGGACGTCCTTCTGCTACGTCCTTCGG
CCCTCAATCCAGCGGACCTTCCTTCCCGCGGCCTGCTGCCGGCTCTGCGGCCTCTTCCGC
GTCTTCGCCTTCGCCCTCAGACGAGTCGGATCTCCCTTTGGGCGCCTCCCCGCCTGGAA
TTCCGCGACTCTAGATCATAATCAGCCATACCACATTTGTAGAGGTTTTACTTGCTTTAA
AAAACCTCCCACACCTCCCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTGTTA
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ATAAAGCATTTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAAACTCATCAATGTATCTT
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GCCATGGAAAGGACGTGAGCTTCCCCGACAACACCACGGAATTGTGAGTGCCCAACAGCC
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ACTCCAGCAGGACCATGTGATCGCGCTTCTCGTTGGGGTCTTTGCTCAGGGCGGACTGGG
TGCTCAGGTAGTGGTTGTGCGGCAGCAGCACGGGGCCGTCGCCGATGGGGGTGTTCTGCT
GGTAGTGGTCGGCGAGCTGCACGCTGCCGTCTCGATGTTGTGGCGGATCTTGAAGTTCA
CCTTGATGCCGTTCTTCTGCTTGTGCGCCATGATATAGACGTTGTGGCTGTTGTAGTTGT
ACTCCAGCTTGTGCCCCAGGATGTTGCCGTCTCCTTGAAGTCGATGCCCTTCAGCTCGA
TGCGGTTTACCAGGGTGTGCGCCTCGAACTTACCTCGGCGCGGGTCTTGTAGTTGCCGT
CGTCCTTGAAGAAGATGGTGCCTCCTGGACGTAGCCTTCGGGCATGGCGGACTTGAAGA
AGTCGTGCTGCTTCATGTGGTGGGGTAGCGGCTGAAGCACTGCACGCCGTAGGTCAGGG
TGGTCACGAGGGTGGGCCAGGGCACGGGCAGCTTGCCGGTGGTGCAGATGAACTTCAGGG
TCAGCTTGCCGTAGGTGGCATCGCCCTCGCCCTCGCCGGACACGCTGAACTTGTGGCCGT
TTACGTGCGCGTCCAGCTCGACCAGGATGGGCACCACCCCGGTGAACAGCTCCTCGCCCT
TGCTCACCATGGTGGCGACCGGTGGATCCTGAAGAAAAGGGAGAATTGCAATTTCAGACTC
GGTACCTTTAAGACCAATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTAAAAGA
AAAGGGGGGACTGGAAGGGCTAATTCCTCCCAACGAAGACAAGATCTGCTTTTGTCTTG
TACTGGGTCTCTCTGGTTAGACCAGATCTGAGCCTGGGAGCTCTCTGGCTAACTAGGGAA
CCCCTGCTTAAAGCCTCAATAAAGCTTGCCCTGAGTGCTTCAAGTAGTGTGTGCCCGTCT
GTTGTGTGACTCTGGTAACTAGAGATCCCTCAGACCCTTTTAGTCAGTGTGGAAAATCTC
TAGCAGTAGTAGTTCATGTATCTTATTATTAGTATTTATAACTTGCAAAGAAATGAAT
ATCAGAGAGTGAGAGGAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAG
CATCACAATTTTACAAATAAAGCATTTTTTTTCACTGCATTCTAGTTGTGGTTTGTCCAA
ACTCATCAATGTATCTTATCATGTCTGGCTCTAGCTATCCCGCCCCTAACTCCGCCAGT
TCCGCCCATCTCCGCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCC

Figure 5D

GCCTCGGCCTCTGAGCTATTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTT
TGCGTCGAGACGTACCCAATTCGCCCTATAGTGAGTCGTATTACGCGCGCTCACTGGCCG
TCGTTTTACAACGTCGTGACTGGGAAAACCCTGGCGTTACCCAACCTAATCGCCTTGCAG
CACATCCCCCTTTCGCCAGCTGGCGTAATAGCGAAGAGGCCCGCACCGATCGCCCTTCCC
AACAGTTGCGCAGCCTGAATGGCGAATGGCGCGACGCGCCCTGTAGCGGCGCATTAAGCG
CGGCGGGTGTGGTGGTTACGCGCAGCGTGACCGCTACACTTGCCAGCGCCCTAGCGGCCG
CTCCTTTCGCTTTCCTCCCTTCCTTCTCGCCACGTTGCGCGGCTTCCCCGTCAAGCTC
TAAATCGGGGGCTCCCTTTAGGGTTCCGATTTAGTGCTTTACGGCACCTCGACCCCCAAA
AACTTGATTAGGGTGATGGTTCACGTAGTGGGCCATCGCCCTGATAGACGGTTTTTTCGCC
CTTTGACGTTGGAGTCCACGTTCTTTAATAGTGGA CTCTTGTTCCAAACTGGAACAACAC
TCAACCCTATCTCGGTCTATTCTTTTGATTTATAAGGGATTTTGCCGATTTTCGGCCTATT
GGTTAAAAAATGAGCTGATTTAACAAAAATTTAACGCGAATTTTAACAAAATATTAACGT
TTACAATTTCC

Figure 6A

CCGGTCGCCACCATGGCCTCCTCCGAGAACGTCATCACCGAGTTCATGCGCTTCAAGGTGCGCA
TGGAGGGCACCCTGAACGGCCACGAGTTCGAGATCGAGGGCGAGGGCGAGGGCCGCCCTACGA
GGGCCACAACACCGTGAAGCTGAAGGTGACCAAGGGCGGCCCCCTGCCCTTCGCCTGGGACATC
CTGTCCCCCAGTTCAGTACGGCTCCAAGGTGTACGTGAAGCACCCCGCCGACATCCCCGACT
ACAAGAAGCTGTCCTTCCCCGAGGGCTTCAAGTGGGAGCGCGTGATGAACCTTCGAGGACGGCGG
CGTGGCGACCGTGACCCAGGACTCCTCCCTGCAGGACGGCTGCTTCATCTACAAGGTGAAGTTC
ATCGGCGTGAACCTTCCCCTCCGACGGCCCCGTGATGCAGAAGAAGACCATGGGCTGGGAGGCCT
CCACCGAGCGCCTGTACCCCCGCGACGGCGTGCTGAAGGGCGAGACCCACAAGGCCCTGAAGCT
GAAGGACGGCGGCCACTACCTGGTGGAGTTCAGTCCATCTACATGGCCAAGAAGCCCGTGCGAG
CTGCCCGGCTACTACTACGTGGACGCCAAGCTGGACATCACCTCCCACAACGAGGACTACACCA
TCGTGGAGCAGTACGAGCGCACCGAGGGCCGCCACCACCTGTTCCCTGTAGCGGCCGCGACTCTA
GATCATAATCAGCCATACCACATTTGTAGAGGTTTTACTTGCTTTAAAAAACCTCCCACACCTC
CCCCTGAACCTGAAACATAAAATGAATGCAATTGTTGTTGTTAACTTGTTTATTGCAGCTTATA
ATGGTTACAAATAAAGCAATAGCATCACAAATTCACAAATAAAGCATTTTTTTTCAGTGCATTC
TAGTTGGATCCTTTATTTGTGAAATTTGTGATGCTATTGCTTTATTTGTAACCATTATAAGCTG
CAATAAACAAAGTTAACAAACAATTCGATTTCATTTTATGTTTCAGGTTTCAGGGGGAGGTGTGG
GAGGTTTTTTTAAAGCAAGTAAACCTCTACAAATGTGGTATGGCTGAATTCAGGGCGGGGAGGC
GGCCCAAAGGGAGATCCGACTCGTCTGAGGGCGAAGGCGAAGACGCGGAAGAGGCCGCGAGAGCC
GGCAGCAGGCCGCGGGAAGGAAGGTCCGCTGGATTGAGGGCCGAAGGGACGTAGCAGAAGGACG
TCCCGCGCAGAATCCAGGTGGCAACACAGGCGAGCAGCCATGGAAAGGACGTCAGCTTCCCCGA
CAACACCACGGAATTGTCAGTGCCCAACAGCCGAGCCCCCTGTCCAGCAGCGGGCAAGGCAGGCG
GCGATGAGTTCCGCCGTGGCAATAGGGAGGGGGAAAGCGAAAGTCCCGGAAAGGAGCTGACAGG
TGGTGGCAATGCCCCAACCAAGTGGGGGTTGCGTCAGCAAACACAGTGCACACCACGCCACGTTG
CCTGACAACGGGCCACAACCTCCTCATAAAGAGACAGCAACCAGGATTTATACAAGGAGGAGAAA
ATGAAAGCCATACGGGAAGCAATAGCATGATACAAAGGCATTAAAGCAGCGTATCCACATAGCG
TAAAAGGAGCAACATAGTTAAGAATACCAGTCAATCTTTCACAAATTTTGTAATCCAGAGGTTG
ATTGTGACGCGCGGCCGCTTTACTTGTACAGCTCGTCCATGCCGAGAGTGATCCCGGCGGCGGTC
ACGAACTCCAGCAGGACCATGTGATCGCGCTTCTCGTTGGGGTCTTTGCTCAGGGCGGACTGGG
TGCTCAGGTAGTGGTTGTGCGGCAGCAGCACGGGGCCGTGCGCGATGGGGGTGTTCTGCTGGTA
GTGGTGGCGAGCTGCACGCTGCCGTCTCGATGTTGTGGCGGATCTTGAAGTTCACCTTGATG
CCGTTCTTCTGCTTGTGCGCCATGATATAGACGTTGTGGCTGTTGTAGTTGTACTCCAGCTTGT
GCCCCAGGATGTTGCCGTCTCCTTGAAGTCGATGCCCTTCAGCTCGATGCGGTTACACAGGGT
GTCGCCCTCGAACTTCACCTCGGCGCGGGTCTTGTAGTTGCCGTGCTCCTTGAAGAAGATGGTG
CGCTCCTGGACGTAGCCTTCGGGCATGGCGGACTTGAAGAAGTCGTGCTGCTTCATGTGGTCGG
GGTAGCGGCTGAAGCACTGCACGCCGTAGGTGAGGGTGGTCACGAGGGTGGGCCAGGGCACGGG
CAGCTTGCCGGTGGTGCAGATGAACCTTCAGGGTCAGCTTGCCGTAGGTGGCATCGCCCTCGCCC
TCGCCGGACACGCTGAACTTGTGGCCGTTTACGTGCGCGTCCAGCTCGACCAGGATGGGCACCA
CCCCGGTGAACAGCTCCTCGCCCTTGCTCACCATCTGAAGAAAAGGGAGGTACCTTTAAGACCA
ATGACTTACAAGGCAGCTGTAGATCTTAGCCACTTTTTTAAAGAAAAGGGGGGACTGGAAGGGC
TAATTCACTCCCAACGAAGACAAGATATCCTTGATCTGTGGATCTACCACACACAAGGCTACTT
CCCTGATTGGCAGAACTACACACCAGGGCCAGGGATCAGATATCCACTGACCTTTGGATGGTGC
TACAAGCTAGTACCAGTTGAGCAAGAGAAGGTAGAAGAAGCCAATGAAGGAGAGAACACCCGCT
TGTTACACCCTGTGAGCCTGCATGGGATGGATGACCCGGAGAGAGAAGTATTAGAGTGGAGGTT
TGACAGCCGCCTAGCATTTTCATCACATGGCCCGAGAGCTGCATCCGGAGTACTTCAAGAACTGC
TGACATCGAGCTTGCTACAAGGGACTTTCGCTGGGGACTTTCCAGGGAGGCGTGGCCTGGGCG
GGACTGGGGAGTGGCGAGCCCTCAGATGCTGCATATAAGCAGCTGCTTTTTTGCTTGTACTGGGT
CTCTCTGGTTAGACCAGATCTGAGCCTGGGAGCTCTCTGGCTAACTAGGGAACCCACTGCTTAA
GCCTCAATAAAGCTTGCCCTTGAGTGCTTCAAGTAGTGTGTGCCCGTCTGTTGTGTGACTCTGGT
AACTAGAGATCCCTCAGACCCTTTTAGTCAGTGTGGAAAATCTCTAGCAGTAGTAGTTCATGTC
ATCTTATTATTTCAGTATTTATAACTTGCAAAGAAATGAATATCAGAGAGTGAGAGGCCTTGACA

Figure 6B

TTATAATAGATTTAGCAGGAATTGAACTAGGAGTGGAGCACACAGGCAAAGCTGCAGAAGTACT
TGGAAGAAGCCACCAGAGATACTCACGATTCTGCACATACCTGGCTAATCCCAGATCCTAAGGA
TTACATTAAGTTTACTAACATTTATATAATGATTTATAGTTTAAAGTATAAACTTATCTAATTT
ACTATTCTGACAGATATTAATTAATCCTCAAATATCATAAGAGATGATTACTATTATCCCCATT
TAACACAAGAGGAACTGAGAGGGGAAAGATGTTGAAGTAATTTTCCCACAATTACAGCATCCGT
TAGTTACGACTCTATGATCTTCTGACACAAATTCCATTTACTCCTCACCTATGACTCAGTCGA
ATATATCAAAGTTATGGACATTATGCTAAGTAACAAATTACCCTTTTATATAGTAAATACTGAG
TAGATTGAGAGAAGAAATTGTTTGGCAAACCTGAATAGCTTCCAGAAGAAGAGAAGTGAGGATA
AGAATAACAGTTGTCATTAACCAGTTTTAACAAGTAACCTTGGTTAGAAAGGGATTCAAATGCAT
AAAGCAAGGGATAAATTTTTCTGGCAACAAGACTATACAATATAACCTTAAATATGACTTCAA
TAATTGTTGGAACCTTGATAAACTAATTAAATATTATTGAAGATTATCAATATTATAAATGTAA
TTTACTTTTAAAAAGGGAACATAGAAATGTGTATCATTAGAGTAGAAAACAATCCTTATTATCA
CAATTTGTCAAAACAAGTTTGTATTAAACACAAGTAGAATACTGCATTCAATTAAGTTGACTGC
AGATTTTGTGTTTTGTATAAATTAGAAAGAGATAACAACAATTTGAATTATTGAAAGTAACATG
TAAATAGTTCTACATACGTTCTTTTGACATCTTGTTCAATCATTGATCGAAGTTCTTTATCTTG
GAAGAATTTGTTCCAAAGACTCTGAAATAAGGAAAACAATCTATTATATAGTCTCACACCTTTG
TTTTACTTTTGTGATTTCAATTTAATAATGTAAATGGTTAAAATTTATTCTTCTCTGAGATCA
TTTCACATTGCAGATAGAAAACCTGAGACTGGGGTAATTTTTATTAAAATCTAATTTAATCTCA
GAAACACATCTTTATTCTAACATCAATTTTTTCCAGTTTGATATTATCATATAAAGTCAGCCTTC
CTCATCTGCAGGTTCCACAACAAAAATCCAACCAACTGTGGATCAAAAATATTGGGAAAAAATT
AAAAATAGCAATACAACAATAAAAAAATACAAATCAGAAAAACAGCACAGTATAACAACCTTTAT
TTAGCATTTACAATCTATTAGGTATTATAAGTAATCTAGAATTAATTCCGTGTATTCTATAGTG
TCACCTAAATCGTATGTGTATGATACATAAGGTTATGTATTAATTGTAGCCGCGTTCTAACGAC
AATATGTACAAGCCTAATTGTGTAGCATCTGGCTTACTGAAGCAGACCCTATCATCTCTCTCGT
AAACTGCCGTCAGAGTCGGTTTGGTTGGACGAACCTTCTGAGTTTCTGGTAACGCCGTTCCGCA
CCCCGGAAATGGTCAGCGAACCAATCAGCAGGGTCATCGCTAGCCAGATCCTCTACGCCGGACG
CATCGTGGCCGGCATCACCGGCGCCACAGGTGCGGTTGCTGGCGCCTATATCGCCGACATCACC
GATGGGGAAGATCGGGCTCGCCACTTCGGGCTCATGAGCGCTTGTTTCGGCGTGGGTATGGTGG
CAGGCCCCGTGGCCGGGGGACTGTTGGGCGCCATCTCCTTGATGCACCATTCTTGCGGCGGC
GGTGCTCAACGGCCTCAACCTACTACTGGGCTGCTTCCTAATGCAGGAGTCGCATAAGGGAGAG
CGTCGATATGGTGCATCTCAGTACAATCTGCTCTGATGCCGCATAGTTAAGCCAGCCCCGACA
CCCGCCAACACCCGCTGACGCGCCCTGACGGGCTTGTCTGCTCCCGGCATCCGCTTACAGACAA
GCTGTGACCGTCTCCGGGAGCTGCATGTGTGAGAGGTTTTACCGTCATCACCGAAACGCGCGA
GACGAAAGGGCCTCGTGATACGCCTATTTTTATAGGTTAATGTCATGATAATAATGGTTTCTTA
GACGTCAGGTGGCACTTTTCGGGGAAATGTGCGCGGAACCCCTATTTGTTTATTTTTCTAAATA
CATTCAAATATGTATCCGCTCATGAGACAATAACCCTGATAAATGCTTCAATAATATTGAAAAA
GGAAGAGTATGAGTATTCAACATTTCCGTGTCGCCCTTATTCCTTTTTTTCGGGCATTTTGCCT
TCCTGTTTTTGTCTACCCAGAAACGCTGGTGAAAGTAAAGATGCTGAAGATCAGTTGGGTGCA
CGAGTGGGTTACATCGAACTGGATCTCAACAGCGGTAAGATCCTTGAGAGTTTTCGCCCCGAAG
AACGTTTTCCAATGATGAGCACTTTTAAAGTTCTGCTATGTGGCGCGGTATTATCCCGTATTGA
CGCCGGGCAAGAGCAACTCGGTCGCCGCATACACTATTCTCAGAATGACTTGTTGAGTACTCA
CCAGTCACAGAAAAGCATCTTACGGATGGCATGACAGTAAGAGAATTATGCAGTGCTGCCATAA
CCATGAGTGATAACACTGCGGCCAACTTACTTCTGACAACGATCGGAGGACCGAAGGAGCTAAC
CGTTTTTTTTGCACAACATGGGGGATCATGTAACCTGCCTTGATCGTTGGGAACCGGAGCTGAAT
GAAGCCATAACCAACGACGAGCGTGACACCACGATGCCTGTAGCAATGGCAACAACGTTGCGCA
AACTATTAACCTGGCGAACTACTTACTCTAGCTTCCCGGCAACAATTAATAGACTGGATGGAGGC
GGATAAAGTTGCAGGACCACTTCTGCGCTCGGCCCTTCCGGCTGGCTGGTTTATTGCTGATAAA
TCTGGAGCCGGTGAGCGTGGGTCTCGCGGTATCATTGACGACTGGGGCCAGATGGTAAGCCCT

Figure 6C

CCCGTATCGTAGTTATCTACACGACGGGGAGTCAGGCAACTATGGATGAACGAAATAGACAGAT
CGCTGAGATAGGTGCCTCACTGATTAAGCATTGGTAAGTGTGACCAAGTTTACTCATATATA
CTTTAGATTGATTTAAACTTCATTTTTTAATTTAAAGGATCTAGGTGAAGATCCTTTTTTGATA
ATCTCATGACCAAATCCCTTAACGTGAGTTTTTCGTTCCACTGAGCGTCAGACCCCGTAGAAAA
GATCAAAGGATCTTCTTGAGATCCTTTTTTTCTGCGCGTAATCTGCTGCTTGCAAACAAAAAA
CCACCGCTACCAGCGGTGGTTTGGTTGCCGGATCAAGAGCTACCAACTCTTTTTCCGAAGGTAA
CTGGCTTCAGCAGAGCGCAGATACCAAATACTGTCCTTCTAGTGTAGCCGTAGTTAGGCCACCA
CTTCAAGAACTCTGTAGCACCGCCTACATACCTCGCTCTGCTAATCCTGTTACCAGTGGCTGCT
GCCAGTGGCGATAAGTCGTGTCTTACCGGGTTGGACTCAAGACGATAGTTACCGGATAAGGCGC
AGCGGTCGGGCTGAACGGGGGGTTTCGTGCACACAGCCAGCTTGGAGCGAACGACCTACACCGA
ACTGAGATACCTACAGCGTGAGCTATGAGAAAGCGCCACGCTTCCCGAAGGGAGAAAGCGGGAC
AGGTATCCGGTAAGCGGCAGGGTCGGAACAGGAGAGCGCACGAGGGAGCTTCCAGGGGGAAACG
CCTGGTATCTTTATAGTCCTGTGCGGTTTCGCCACCTCTGACTTGAGCGTCGATTTTTGTGATG
CTCGTCAGGGGGGCGGAGCCTATGGAAAAACGCCAGCAACGCGGCCTTTTTACGGTTCCTGGCC
TTTTGCTGGCCTTTTGCTCACATGTTCTTTCCTGCGTTATCCCCTGATTCTGTGGATAACCGTA
TTACCGCCTTTGAGTGAGCTGATACCGCTCGCCGCAGCCGAACGACCGAGCGCAGCGAGTCAGT
GAGCGAGGAAGCGGAAGAGCGCCCAATACGCAAACCGCCTCTCCCCGCGCGTTGGCCGATTCAT
TAATGCAGCTGTGGAATGTGTGTCAGTTAGGGTGTGGAAAGTCCCCAGGCTCCCCAGCAGGCAG
AAGTATGCAAAGCATGCATCTCAATTAGTCAAGCAACCAGGTGTGGAAAGTCCCCAGGCTCCCCA
GCAGGCAGAAGTATGCAAAGCATGCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCCTAACTC
CGCCCATCCCGCCCCCTAACTCCGCCAGTTCCGCCCATTTCTCGCCCCATGGCTGACTAATTTT
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TTTTTTGGAGGCCCTAGGCTTTTGCAAAAAGCTTGGACACAAGACAGGCTTGGCAGATATGTTTG
AGAATACCACTTTATCCCGCGTCAGGGAGAGGCAGTGCGTAAAAAGACGCGGACTCATGTGAAA
TACTGGTTTTTAGTGCGCCAGATCTCTATAATCTCGCGCAACCTATTTTCCCCTCGAACACTTT
TTAAGCCGTAGATAAACAGGCTGGGACACTTCACATGAGCGAAAAATACATCGTCACCTGGGAC
ATGTTGCAGATCCATGCACGTAACTCGCAAGCCGACTGATGCCTTCTGAACAATGGAAAGGCA
TTATTGCCGTAAGCCGTGGCGGTCTGTACCGGGTTCGCTTACTGGCGCGTGAACGGGTATTCGT
CATGTCGATACCGTTTGTATTTCCAGCTACGATCACGACAACCAGCGCGAGCTTAAAGTGCTGA
AACGCGCAGAAGGCGATGGCGAAGGCTTCATCGTTATTGATGACCTGGTGGATACCGGTGGTAC
TGCGGTTGCGATTTCGTGAAATGTATCCAAAAGCGCACCTTGTACCATCTTCGCAAAACCGGCT
GGTCGTCCGCTGGTTGATGACTATGTTGTTGATATCCCGCAAGATACCTGGATTGAACAGCCGT
GGGATATGGGCGTCGTATTCGTCCCGCCAATCTCCGGTCGCTAATCTTTTCAACGCCTGGCACT
GCCGGGCGTTGTTCTTTTTAACTTCAGGCGGGTTACAATAGTTTCCAGTAAGTATTCTGGAGGC
TGCATCCATGACACAGGCAAACCTGAGCGAAACCTGTTCAAACCCCGCTTTAAACATCCTGAA
ACCTCGACGCTAGTCCGCCGCTTTAATCACGGCGCACAAACCGCCTGTGCAGTCGGCCCTTGATG
GTAAACCATCCCTCACTGGTATCGCATGATTAACCGTCTGATGTGGATCTGGCGCGGCATTGA
CCCACGCGAAATCCTCGACGTCCAGGCACGTATTGTGATGAGCGATGCCGAACGTACCGACGAT
GATTTATACGATACGGTGATTGGCTACCGTGGCGGCAACTGGATTTATGAGTGGGCCCCGGATC
TTTGTGAAGGAACCTTACTTCTGTGGTGTGACATAATTGGACAAACTACCTACAGAGATTTAAA
GCTCTAAGGTAAATATAAAATTTTTAAGTGTATAATGTGTTAACTACTGATTCTAATTGTTTG
TGTATTTTAGATTCCAACCTATGGAACCTGATGAATGGGAGCAGTGGTGGAAATGCCTTTAATGAG
GAAAACCTGTTTTGCTCAGAAGAAATGCCATCTAGTGATGATGAGGCTACTGCTGACTCTCAAC
ATTCTACTCCTCCAAAAAAGAAGAGAAAGGTAGAAGACCCCAAGGACTTTCCTTCAGAATTGCT
AAGTTTTTTGAGTCATGCTGTGTTTAGTAATAGAAGTCTTGCTTGCTTTGCTATTTACACCACA
AAGGAAAAGCTGCACTGCTATACAAGAAAATTATGGAAAAATATTCTGTAACCTTTATAAGTA
GGCATAACAGTTATAATCATAACATACTGTTTTTTCTTACTCCACACAGGCATAGAGTGTCTGC
TATTAATAACTATGCTCAAAAATTGTGTACCTTTAGCTTTTTTAATTTGTAAAGGGGTTAATAAG
GAATATTTGATGTATAGTGCTTGACTAGAGATCATAATCAGCCATACCACATTTGTAGAGGTT
TACTTGCTTTAAAAAACCTCCACACCTCCCCCTGAACCTGAAACATAAAATGAATGCAATTG

Figure 6D

TTGTTGTTAACTTGTTTATTGCAGCTTATAATGGTTACAAATAAAGCAATAGCATCACAAATTT
CACAAATAAAGCATTTTTTTCCTGCTTCTAGTTGTGGTTTGTCCAACTCATCAATGTATCT
TATCATGTCTGGATCAACTGGATAACTCAAGCTAACCAAAATCATCCCAAACCTCCACCCCAT
ACCCTATTACCACTGCCAATTACCTGTGGTTTCATTTACTCTAAACCTGTGATTCCTCTGAATT
ATTTTCATTTTAAAGAAATTGTATTGTTAAATATGTACTACAACTTAGTAGT